

POLITICAL SCIENCE

Partisans' science interests

People who purchase liberal books have distinct tastes for science compared with those who purchase conservative books. This raises questions about the existence of 'echo chambers' on matters where science can inform political debates.

Toby Bolsen

Science has become a battleground in many contemporary political debates. Polarization surrounding 'facts' has become commonplace on issues ranging from the existence of human-caused climate change to the health consequences of some childhood vaccinations¹. This raises questions about the degree to which scientific information contributes to political discourse given the tendency of individuals to primarily attend to information that reinforces their existing beliefs and political identities, and avoid it otherwise². In this issue, Shi *et al.*³ report that those who purchase books that take consistently conservative or liberal stances have distinct preferences in the realm of science — both in their tastes for different categories of science and in the breadth of their interest within specific scientific disciplines.

Most of what is known about partisans' information-seeking behaviours comes from studies conducted in experimental laboratories or through surveys that ask people to self-report their actions. Little work observes such decisions in naturally occurring contexts. Shi *et al.* fill this void by examining book purchases through the online retailers Amazon and Barnes and Nobles to construct a co-purchase network of political books and science books. The authors' analyses focus on identifying the extent to which people that buy political books are also interested in science, as well as the domains of science in which different ideological groups are most interested. This is a unique way to observe the scientific preferences of consumers of ideologically distinct political books, and it leads to interesting insights about partisans' engagement with science.

The authors' method involved collecting data on millions of co-purchase links across samples from the United States' two largest online booksellers. Human coders began by identifying an initial sample of 3,530 political book titles of which 673 were classified as conservative books and 583 as liberal books. The authors then identified all titles that appeared under scientific

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categories in the Library of Congress. This included classifying a total of 428,433 books into 27 scientific domains and 4 primary categories. The authors subsequently evaluated co-purchase links between 'red' (conservative) and 'blue' (liberal) books and science books to assess their: (1) political relevance — that is, how likely it is that books from a given discipline will be co-purchased with political books; (2) political alignment — that is, locating a book's interest on a red versus blue spectrum depending on interest among buyers of conservative or liberal books; and (3) political polarization — that is, the extent to which interests in a discipline diverge based on purchases of ideologically distinct books.

The findings reveal that those who buy political books with a clear liberal or conservative alignment are more likely to purchase books about scientific subjects overall, relative to books about non-scientific subjects. The political relevance of science is thus greater than that found in other domains, largely due to a preference for reading books about social science. Nonetheless, a distinct pattern emerges among the specific science books purchased by different partisans. Liberals prefer to read books from disciplines focused on basic sciences such as anthropology, astronomy, and zoology, while conservatives are more likely to purchase books that focus on applied sciences such as organic chemistry, medicine, and law. Although some disciplines attract equal interest from

liberals and conservative readers, even when left and right partisans are equally interested in a discipline, they rarely read the same books or even books on the same topics. For instance, buyers of conservative books in the domains of climatology, environmental science, political science, and biology tend to purchase books that are tightly clustered on the periphery of the discipline's co-purchase networks, while liberals are more likely to buy a diverse set of books at the core of each discipline's co-purchase network, indicating more frequent co-purchases with other books across the discipline.

An important caveat is that although half of the population purchases books online, this is not a random sample of readers of conservative and liberal books. Additional research is necessary to generalize about the scientific preferences of conservatives and liberals who do not purchase political books online. It is also important to keep in mind that although co-purchasing patterns reveal population-level differences in interests in scientific disciplines and topics, they do not allow for an examination of the causes of individual-level differences. Future research must identify the causal factors driving different groups' scientific interests. The present findings identify important differences in science consumption patterns of ideological groups, laying the groundwork for additional work that explores the causal factors driving the observed differences.

Although many questions remain, the findings provide a comprehensive documentation of partisans' information-seeking behaviour in different scientific domains. The behavioural patterns identified in the present study are consistent with broader concerns that partisans' selection of distinct sources of scientific and political information may lead to echo chambers — for instance, if individuals selectively expose themselves to the views of like-minded others who reinforce and strengthen their own views. This can impede science's ability to enhance the quality of political debates. Science communicators can, however, highlight shared values and

common interests among diverse audiences to increase the credibility of scientific claims and evidence⁴. It is also important to highlight scientific consensus when such a consensus exists on an issue as a way to promote public understanding across the political spectrum^{5,6}. Finally, communicators must attend to the motivations that guide partisans' information-seeking behaviours and identify ways to encourage an even-handed, or unbiased, assessment of scientific arguments and evidence⁷. This can offer

insights into how best to communicate scientific information as a way to inform and enhance political debates. □

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Competing interests

The author declares no competing interests.